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| EXAMINER | |
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| NGUYEN, HUNG D | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/574,401 | ARTELSMAIR, JOSEF | |
| | Examiner | Art Unit | |
| | HUNG NGUYEN | 4118 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *03 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/25/08, 4/03/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it should be in narrative form and generally limited to a single paragraph on a separate sheet and it should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. . Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: each part of the specification should be preceded by one of the headings set forth above.

Page 2, Par. 35, Line 1 of the Specification recites "ticular" which appears to be a misspelling of the word "Particular".

Page 3, Par. 41, Lines 6-7 of the Specification recites "welding wire I" which appears to be a misspelling of the word "welding current I ".

Appropriate correction is required.

***Claim Objections***

2. Claim 28 is objected to because of the following informalities: "a selection or adjustment" which appears to be a misspelling of the word "a selection for adjustment". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. In claim 1, there is insufficient antecedent basis for "the workpiece" recited in line 11 in the claim.

5. In claim 1, there is insufficient antecedent basis for "the wire conveyance" recited in line 16 in the claim.

6. In claim 5, there is insufficient antecedent basis for "the droplet" recited in line 4 in the claim.

7. In claim 6, there is insufficient antecedent basis for "the individual welding process phases" recited in line 3 in the claim.

8. In claim 8, there is insufficient antecedent basis for "the welding apparatus" recited in line 4 in the claim.

9. In claims 1, 6, 8, 9, 10, 15, 17, 18, 21, 22 and 25-27, the recitation "and/or" is considered indefinite per se.

In claims 1, 4, 6, 13, 23 and 23, the language "in particular" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

10. In claim 11, there is insufficient antecedent basis for "the lift-arc principle" recited in line 4 in the claim.

11. In claim 16, the recitation of "an embodiment for carrying out the method according to claim 1" at line 3 renders the claim indefinite and makes the claimed scope uncertain. It is unclear whether claim 16 intended to be an apparatus or a process or perhaps a hybrid. Clarification is needed.

Claim 16 is also rejected under 35 U.S.C. 101 because the claimed invention is appeared to be a hybrid between an apparatus.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 1, 4-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Artelsmair (WO 00/64620) in view of Hsu et al (US Pat. 6,717,107).

14. Regarding claim 1, Artelsmair discloses the method for controlling a welding process using a consumable electrode 13 (Fig. 1), in which a welding process adjusted on the basis of several different welding parameters and controlled by a control device 4 (Fig. 1) is carried out by a welding current source 2 (Fig. 1) after the ignition of an electric arc 15 (Fig. 1), and wherein said welding process phase having a low energy input a cold-metal-transfer phase is used, during which the welding wire 13 (Fig. 1) is

conveyed in the direction of the workpiece 16 (Fig. 1) until contacting the same, and the wire conveyance is subsequently reversed after the creation of a short circuit, thus conveying the welding wire 13 (Fig. 1) back as far as to a predefined distance from the workpiece (16) (English abstract and the discussion at Par. 2, 26, 30-31, 39, 44-51 of the machine generated English translation; See Figures 1 and 3-7) except for at least one welding process phase having a high energy input and a welding process phase having a low energy input resulting from different material transitions and, in particular, the heat input into the workpiece 16 (Fig. 1) to be worked.

15. Hsu et al. teaches the two stage welder and method of operating the welder where the high energy and low energy is perform during the welding process (Col. 1, Lines 51-64). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Hsu et al. in order to have the two stage welder electric arc welder, for the purpose of optimizing the performance of the welder.

16. Regarding claim 4, Artelsmair further discloses the conveyance of the welding wire 13 (Fig. 1) in the direction of the workpiece 16 (Fig. 1), the welding current (I) is changed, particularly increased, so as to induce the formation of a droplet and the incipient melting of the end of the welding wire (English abstract and the discussion at Par. 36-42 of the machine generated English translation).

17. Regarding claim 5, Artelsmair further discloses the welding wire 13 (Fig. 1) is moved back after having contacted the workpiece 16 (Fig. 1), thus detaching the droplet

and the incipiently melted material from the welding wire 13 (Fig. 1) (English abstract and the discussion at Par. 36-42 of the machine generated English translation).

18. Regarding claim 6, Artelsmair further discloses the duration of the individual welding process phases is controlled as a function of the adjusted welding current (I) and, in particular, directly proportionally to the adjusted welding current. (English abstract and the discussion at Par. 46-51 of the machine generated English translation; See Figures 3-7).

19. Regarding claim 7, Artelsmair discloses all the claimed features as set forth above except for the ratio between the welding process phase having a high energy input and the welding process phase having a low energy input is changed as a function of the welding current (I) in the manner recited in claim 7. Hsu et al. teaches the two stage welder and method of operating the welder where the high energy and low energy is perform during the welding process (Col. 1, Lines 51-64). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Hsu et al. in order to have the two stage welder electric arc welder, for the purpose of optimizing the performance of the welder.

20. Regarding claim 8, Artelsmair discloses at least one welding parameter of the heat input into the workpiece (16) to be worked is selected or adjusted on the welding apparatus 1 (Fig. 1) (English abstract and the discussion at Par. 26 of the machine generated English translation; See Figures 3-7) except for the ratio between the welding process phase having a high energy input and the welding process phase having a low energy input being automatically determined and controlled as a function of the

selected. Hsu et al. teaches the two stage welder and method of operating the welder where the high energy and low energy is perform during the welding process (Col. 1, Lines 51-64). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Hsu et al. in order to have the two stage welder electric arc welder, for the purpose of optimizing the performance of the welder.

21. Regarding claim 9, Artelsmair discloses all the claimed features as set forth above except for the ratio of the cyclically alternating welding process phases is determined as a function of the parameters used for the welding process such as, for instance, a welding current (I) in the manner recited in claim 9. Hsu et al. teaches the two stage welder and method of operating the welder where the high energy and low energy is perform during the welding process (Col. 1, Lines 51-64). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Hsu et al. in order to have the two stage welder electric arc welder, for the purpose of optimizing the performance of the welding process..

22. Regarding claim 10, Artelsmair discloses all the claimed features as set forth above except for the ratio of the welding process phase having a low energy input is initiated by specifying the number of pulses in the pulse current phase in the manner recited in claim 10. Hsu et al. teaches the two stage welder and method of operating the welder where the high energy is performed follows by the low energy during the welding process (Col. 1, Lines 51-64) by counting the cycles in the first mode of operation. It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to utilize in Artelsmair the teaching of Hsu et al. in order to have the two stage welder electric arc welder, for the purpose of optimizing the performance of the welding process.

23. Regarding claim 11, Artelsmair further discloses the welding process is started according to the lift-arc principle (English abstract and the discussion at Par. 2 and 32 of the machine generated English translation).

24. Regarding claim 12, Artelsmair discloses the welding process phase having a high energy input is implemented over a defined period upon ignition of the electric arc 15 (Fig. 1) (The discussion at Par. 33 of the machine generated English translation; See Figures 3-7) except for except for the prior to the cyclic alternation of the at least two different welding process phase. Hsu et al. teaches the two stage welder and method of operating the welder where the high energy is performed follows by the low energy during the welding process (Col. 1, Lines 51-64). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Hsu et al. in order to have the cyclic alternation of the at least two different welding process phase, for the purpose of optimizing the performance of the welding process.

25. Regarding claim 13, Artelsmair further discloses the energy input, in particular the welding current (I), during the cold-metal-transfer phase is lower than the energy input, in particular the welding current (I), during the pulse current phase (The discussion at Par. 45-51 of the machine generated English translation; See Figures 3-7).

26. Regarding claim 14, Artelsmair further discloses the wire advance speed is changed during the different welding process phases (The discussion at Par. 30 of the machine generated English translation).

27. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Artelsmair (WO 00/64620) in view of Plottier et al. (US Pat. 6,384,376).

28. Regarding claims 2 and 3, Artelsmair discloses all the claimed features as set forth above except for the pulse current phase and spray-arc phase is used in the welding process phase having a high energy input in the manner recited in claims 2 and 3. Plottier et al. teaches the method and device for pulse arc welding where the pulse current phase and the spray-arc mode is used (Col. 1, Lines 46-58; Claim 1) at very high current. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Plottier et al. in order to have a pulse current phase and spray arc phase in the welding process, for the purpose of having variety of welding mode for different material.

29. Claims 15-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Artelsmair (WO 00/64620) in view of Jank et al. (US Pat. 6,476,354).

30. Regarding claim 15, Artelsmair discloses a welding apparatus 1 (Fig. 1) including a welding current source 2 (Fig. 1), a control device 4 (Fig. 1) , a welding torch 10 (Fig. 1) and a welding wire 13 (Fig. 1),wherein said welding process phase having a low energy input is comprised of a cold-metal-transfer phase, during which the welding wire 13 (Fig. 1) is conveyed in the direction of the workpiece 16 (Fig. 1) until contacting the same, and the wire conveyance is subsequently reversed after the creation of a short

circuit, thus conveying the welding wire 13 (Fig. 1) back as far as to a predefined distance from the workpiece 16 (Fig. 1) except for different welding parameters are adjustable via an input and/or output device provided on the welding apparatus, wherein an adjustment element for the adjustment of the heat balance, via a cyclic combination of at least one welding process phase having a low energy input and a welding process phase having a high energy input, is arranged on the input and/or output device of the welding apparatus in the manner recited in claim 15. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) is used for adjusting the welding parameters selected from the group of the welding current (Col. 2, Lines 37-54). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to adjust the welding parameter by the input and/or output device, for the purpose of controlling the welding process.

31. Regarding claim 16, the combined references disclose an embodiment for carrying out the method.

32. Regarding claim 17, Artelsmair discloses all the claimed features as set forth above except for the further selection or adjustment element is provide for the selection of the welding phases to be used in the manner recited in claim 17. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) where the setting member 47 (Fig. 3) is used for selecting the most varied range of welding parameters and welding process (Col. 5, Lines 25-33). It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to select the welding parameter, for the purpose of selecting an accurate welding parameter for the welding process.

33. Regarding claim 18, Artelsmair discloses all the claimed features as set forth above except for at least one display is provided for the representation of the selected welding parameters and/or the selected welding process phases in the manner recited in claim 18. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) where the display element 49 (Fig. 3) is used for displaying the welding parameters or storing the values to be used (Col. 5, Lines 41-48). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to display the information on the display, for the purpose of displaying the welding parameters during the welding process.

34. Regarding claim 19, Artelsmair discloses all the claimed features as set forth above except for the adjustment element is provided for the selection of the material of the workpiece to be worked in the manner recited in claim 19. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) where the setting member 47 (Fig. 3) is used for selecting/displaying/editing a whole range of welding parameters (Col. 5, Lines 49-63). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to select/display/edit

the welding parameters, for the purpose of selecting the correct parameters for the welding process.

35. Regarding claim 20, Artelsmair discloses all the claimed features as set forth above except for the adjustment element is provided for the selection of the material of the employed welding wire in the manner recited in claim 20. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) where the setting member 47 (Fig. 3) is used for selecting/displaying/editing a whole range of welding parameters (Col. 5, Lines 49-63). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to select/display/edit the welding parameters, for the purpose of selecting the correct parameters for the welding process.

36. Regarding claims 21 and 22, Artelsmair discloses all the claimed features as set forth above except for the input and/or output device in the manner recited in claims 21 and 22. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) for adjusting the parameters of the welding process. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to select/display/edit the welding parameters, for the purpose of selecting the correct parameters for the welding process.

37. Regarding claims 23 and 28, Artelsmair discloses all the claimed features as set forth above except for the adjustment element is provided for the adjustment of the ratio

of the selected welding process phases and, in particular, the duration of the respective welding process in the manner recited in claims 23 and 28. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) where the setting member 47 (Fig. 3) is used for selecting/displaying/editing a whole range of welding parameters (Col. 5, Lines 49-63). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to select/display/edit the welding parameters, for the purpose of selecting the correct parameters for the welding process.

38. Regarding claims 24 and 29, Artelsmair discloses all the claimed features as set forth above except for the memory is provided for the storage of welding parameter adjustments in the manner recited in claim 24 and 29. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where the memory device 29 (Fig. 2) is used to store the control programs (Col.4, Lines 21-25). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to store the welding parameters, for the purpose of calling the preset parameters for the welding process.

39. Regarding claims 25-27, Artelsmair discloses all the claimed features as set forth above except for the input and/or output device in the manner recited in claims 25-27. Jank et al. teaches the method for controlling a welding apparatus and corresponding control device where input and/or output device 22 (Fig. 3) for adjusting the parameters of the welding process. It would have been obvious to one of ordinary skill in the art at

the time of the invention was made to utilize in Artelsmair the teaching of Jank et al. in order to select/display/edit the welding parameters, for the purpose of adjusting to the correct parameters for the welding process.

***Conclusion***

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wittmann et al. (US Pat. 6,479,793) discloses the method for controlling a welding apparatus and corresponding control device. Hsu et al. (US Pat. 6,515,259) discloses the electrical arc welding using high frequency pulses. Friedl et al. (US Pat. 6,315,186) discloses the control device for a welding apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG NGUYEN whose telephone number is (571)270-7828. The examiner can normally be reached on Monday-Friday, 7:30AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG NGUYEN/
Examiner, Art Unit 4118

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742